

States Government

Department of Energy

Nov 6 7 18

Rocky Flats Office

EGGG  
ROCKY FLATS PLANT  
CORRESPONDENCE CENTER


NOV 04 1992

ERD:PMP:12694

Section D Categorical Exclusion (RFO/CX05-93) Determination

C. M. Borgstrom, Director Office of NEPA Oversight, EH-25, HQ

A copy of RFO/CX05-93, Site Characterization Field Work at OUs 12, 14 and 15, is attached for your review.

  
Robert M. Nelson, Jr.  
Manager

Attachment

cc w/Attachment:  
R.S. Scott, EM-20  
L.E. Harris, EM-431  
J. Ciocco, EM-453  
S.M. Nesta, EG&G  
W.A. Moore, EG&G

esta	S	XX
noore	W	XX
enedetti		XX
tedani	T	XX
etlock	G	XX

RES CONTROL	Z	X
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Reviewed for Addressee  
Corres. Control RFP

6-92 *Ci*

DATE BY

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ADMIN RECCRD

**SECTION D**  
**CATEGORICAL EXCLUSION (CX) DETERMINATION RFO/CX05-93**

**Proposed Action:** Site Characterization Field Work at OUs 12, 14, and 15

**Location:** Rocky Flats Plant, Golden, CO

**Proposed by:** U.S. Department of Energy, Rocky Flats Office

**Description of the Proposed Action:**

Rocky Flats Office proposes to perform site characterization field work in three Operable Units (OUs). OUs 12 (400/800 Areas), 14 (Radioactive Sites) and 15 (Inside Building Closures) are scheduled in the InterAgency Agreement (IAG) to undergo site characterization field work starting in the late fall of 1992 (OUs 12 and 14) and early spring of 1993 (OU 15). All three OUs are located entirely within the Security Controlled Area of the Plant, the developed portion of RFP that is occupied by buildings, paved areas, utilities and other features that have significantly disturbed the natural environment. The cost of the characterization is expected to be about \$3.4 million.

**OU 12**

OU 12 is the 400 and 800 Areas, shown in Figure 1. The OU consists of 10 individual hazardous substance sites (IHSSs): 116.1, and 116.2 (multiple solvent spills at the west and south loading dock areas of Building 444); 120.1 and 120.2 (fiberglassing areas north and west of Building 664); 136.1 and 136.2 (backfilled cooling tower ponds southwest, east and northwest of Building 444); 147.2 (process waste leak site northeast of Building 881); 157.2 (an area of radioactive contamination around Building 444); 187 (acid leaks in an area north of Building 444); and 189 (a storage yard in which there were multiple acid spills, northeast of Building 444). Because of their varied histories, field work would be different in each IHSS.

Figures 2 through 11 show the types of field work planned for each IHSS within OU 12 and the locations of each field activity. OU 12 field work would include:

- surficial soil or soil profile samples at 82 locations,
- soil gas surveys at 135 locations,
- soil borings at 20 locations,
- monitoring wells at 3 locations,
- sediment samples at 12 locations,
- hydraulic probes at 25 locations,
- radiological surveys at 43 locations.

Each of these activities is described in the Field Sampling Methods section on page 3. In many instances, more than one type of field work would occur at a single location. Site characterization activities at OU 12 are expected to start in the fourth quarter of 1992 and continue into the fourth quarter of 1993.

## OU 14

OU 14 consists of eight IHSSs (131, 156.1, 160, 161, 162, 164.1, 164.2 and 164.3) in the south and west areas of the plant site shown in Figure 12. Of the eight IHSSs, two are parking lots containing 313,000 square feet, four are paved areas near buildings including 83,000 square feet, one is a storage pad of 25,000 square feet, and the eighth is a paved road covering 161,000 square feet.

Figures 13 through 20 show the types of field work planned for each IHSS in OU14 and the locations of each field activity. OU 14 field work would include:

- surficial soil samples at 355 locations,
- soil gas samples at 125 locations,
- boreholes at 171 locations and
- radiological surveys (including both FIDLER and HPGe surveys) at 530 locations.

Each of these activities is described in the "Field Sampling Methods" section on page 3. In many instances, more than one type of field work would occur at a single location.

If these tasks identify areas that need further investigation, additional radiological surveys, surficial soil sampling, soil gas sampling or drilling of boreholes/monitoring wells may occur in the locations where contamination was found. The amount of additional drilling is expected to be fewer than 20 wells. Up to 355 additional soil samples and 125 additional soil gas samples may be collected from within the same grids where the original samples were taken. Site characterization activities at OU 14 are expected to start in the fourth quarter of 1992 and continue into the first quarter of 1994.

## OU 15

The locations of the six IHSSs (178, 179, 180, 204, 211 and 217) comprising OU 15, Inside Building Closures, are shown in Figure 21. IHSS 212, also shown in the Figure, is not scheduled for field work at this time. Each of the IHSSs is entirely within a building and all the field work for OU 15 would take place inside those buildings. IHSS 178 is in room 165 of Building 881; IHSS 179 is in room 145 of Building 865; IHSS 180 is in room 104 of Building 883; IHSS 204 is in room 502 of Building 447; IHSS 211 is in room 266B of Building 881; and IHSS 217 is in room 131C of Building 881. Because of their locations inside buildings, no maps of the OU 15 field sampling activities are provided. The buildings provide primary, secondary and, in some cases, tertiary, containment for activities within them.

The OU 15 site characterization program is expected to consist solely of visual inspections, surface radiological monitoring and collection of surface wipe and soot samples to be analyzed for radioactivity, VOCs and metals. In addition, any liquids being stored in polyethylene bottles in IHSS 217 would be sampled and analyzed for cyanide. It is expected that all drums stored in the buildings would have been removed from the OU 15 IHSSs before the site characterization program begins. If drums remain in the IHSSs, their contents would be sampled and analyzed. Drums would be sampled in accordance with the appropriate procedures for the type of drum and the nature of its contents. OU 15 field work is expected to start in the second quarter of 1993 and continue through the first quarter of 1994.

## Field Sampling Methods

Field sampling activities would be conducted using the following methods:

Surficial soil sampling using a hand-held scoop to collect soil from a depth of two inches on a 50-foot grid.

Other soil sampling with a Kansas Soil Sampler. This device, which may be used if needed, uses a piston to drive the sampler into the soil to a depth of about one-foot. When the sampler is removed, it brings with it a soil core which would be analyzed for volatile organic compounds (VOCs).

Borehole and well drilling. Hollow-stem augers or, if necessary, rotary drills would be used to drill boreholes while wells would be drilled with conventional augers. Boreholes, typically not more than eight-inches in diameter, would be drilled to determine the geotechnical characteristics of the soil, to further investigate trends identified in earlier tasks, to collect samples for analysis, and to install monitoring wells. Some boreholes drilled to determine geotechnical characteristics of the soil would be drilled to a depth of two-feet and would use a split-spoon sampler to obtain either discrete or composite soil samples. Other boreholes would be drilled to the water table or three-feet into weathered bedrock, whichever is encountered first. All borings not completed as monitoring wells would be grouted and abandoned immediately after drilling to prevent vertical migration of possible contaminants. All drill cuttings and soil samples would be surveyed for radionuclides, VOCs, metals and other contaminants. All such material would be handled in accordance with applicable procedures.

Soil gas surveys using a one-inch diameter stainless steel probe rod driven into the ground by a hydraulic rig mounted on a vehicle. Probes would be driven to a depth of about five feet to collect samples that would be analyzed immediately for VOCs in a mobile lab. Soil gas sampling would generally be done on a 50-foot grid.

Radiological surveys: FIDLER, sodium iodide or HPGe (high purity germanium) system to identify and quantify all gamma-emitting radionuclides. These devices operate non-invasively (no drilling or other physical penetration of the ground) by being moved across the surface of the ground while taking remote readings. The devices may be between an inch and 25-feet above the ground on a tripod or vehicle. Most of the radiological surveying would be done on a 25-foot grid, though the size of the grid would be reduced where elevated radiation levels are encountered.

Surface wipe samples would be obtained by rubbing a moistened filter paper over a specified area of the surface being sampled. The filter paper is then sent to a laboratory for analysis.

Hydraulic probes are small-diameter (typically 2-inches) vehicle-mounted rods that are forced into the ground under hydraulic pressure, similar to the probes used in soil gas surveys. Various measuring devices can be mounted on the probes to measure subsurface conditions. Probe-mounted, vertically-nested tensiometers would be used to measure soil water pressure.

Sediment sampling is done by using a small, hand-held container to remove sediment from the bed of drainages. The drainages to be sampled are small, man-made ditches that are not within the 100 year floodplain of the plant site.


## Categorical Exclusion to be applied:

B3.1 Site characterization and environmental monitoring, including siting, construction, operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, and radar), geochemical, and engineering surveys and mapping, including the establishment of survey marks; (b) Installation and operation of field instruments, such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools; (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants; (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities, including assessment of potential wind energy resources; (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

### DOE NEPA REGULATIONS SECTION D CATEGORICAL EXCLUSION DETERMINATION - RFO/CX05-93 Site Characterization Field Work at OUs 12, 14, and 15

I have determined that the proposed action meets the requirements for a categorical exclusion as defined in the Section D of 10 CFR 1021. Therefore, I approve the categorical exclusion of the proposed action from further NEPA review and documentation.

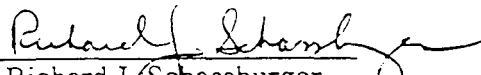
Date: 2 Nov 1992

Signature: 

Title: Robert M. Nelson, Jr.  
Manager, Rocky Flats Office

Project Sponsor:


Date: October 29, 1992

Signature: 

Title: Richard J. Schassburger  
Acting Director, Environmental  
Restoration Division

I have reviewed this determination and find that a categorical exclusion is the appropriate level of NEPA documentation.

Date: October 27, 1992

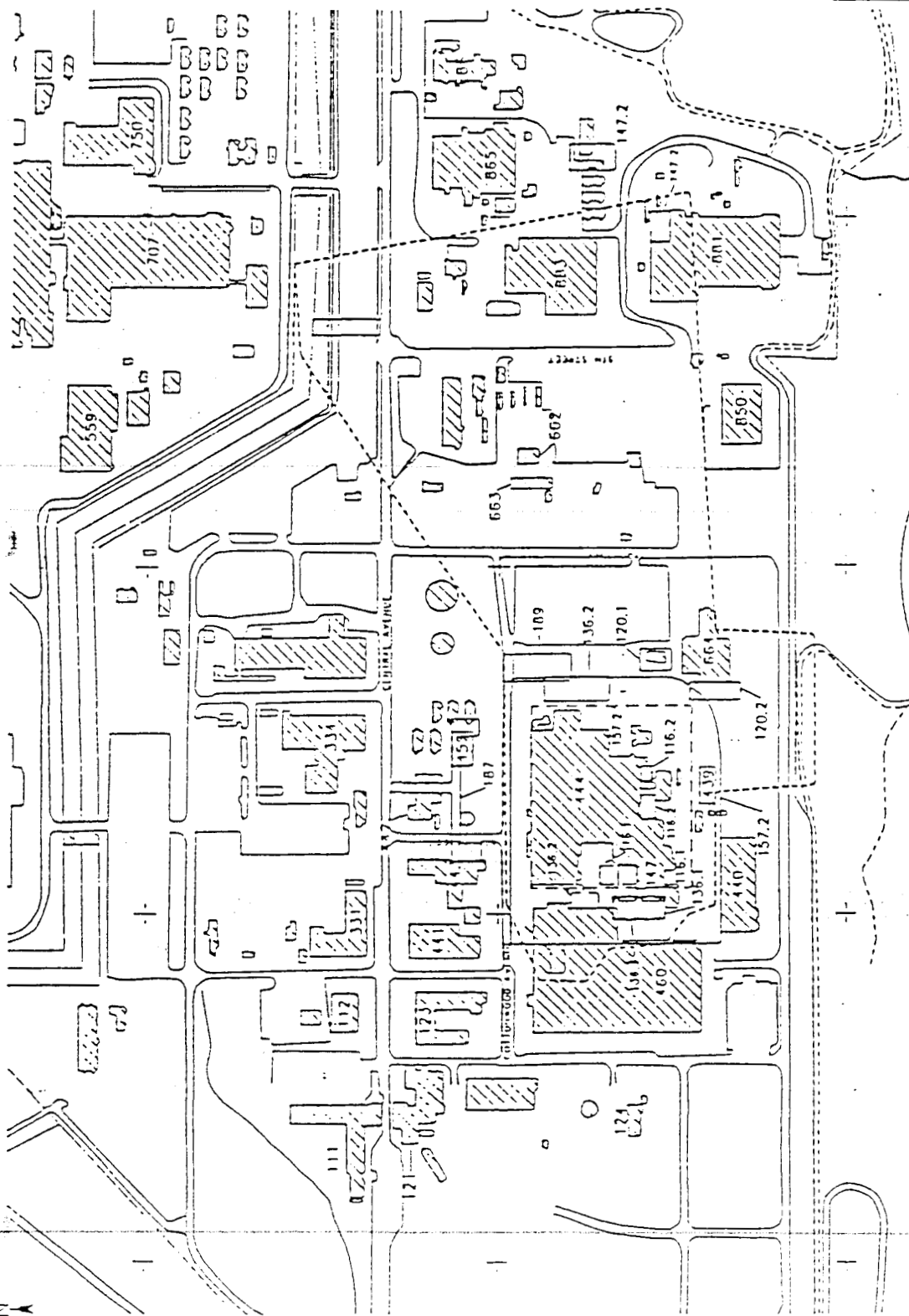
Signature: 

Title: Patricia M. Powell  
NEPA Compliance Officer

ADS number: 1007 A, 1010A, 1018 (EM)  
EC 8992

# EXPLANATION

- OUIZ BOUNDARY
- MISS BOUNDARY
- PREVIOUS MISS BOUNDARY
- KEY TO MISS LOCATIONS
- 116.1 WEST LOADING DOCK, BUILDING 447
- 116.2 SOUTH LOADING DOCK, BUILDING 444
- 136.1 COOLING TOWER FOUND WEST OF BUILDING 444
- 136.2 COOLING TOWER FOUND EAST OF BUILDING 444
- 157.2 RADIOACTIVE SITE
- 187 SOUTH AREA
- 120.1 SULFURIC ACID SPILL
- 120.2 FENCELESS AREA NORTH OF BUILDING 661
- 189 FENCELESS AREA WEST OF BUILDING 661
- 147.1 NITRIC ACID TANKS
- 147.2 PROCESS WASTE TANK LEAKS
- BUILDING PAI
- CONVERSION ACTIVITY



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GRIFFIN, COLORADO

Figure 1  
LOCATION OF  
INDIVIDUAL HAZARDOUS  
SUBSTANCE SITES IN OUIZ

REVISION 110

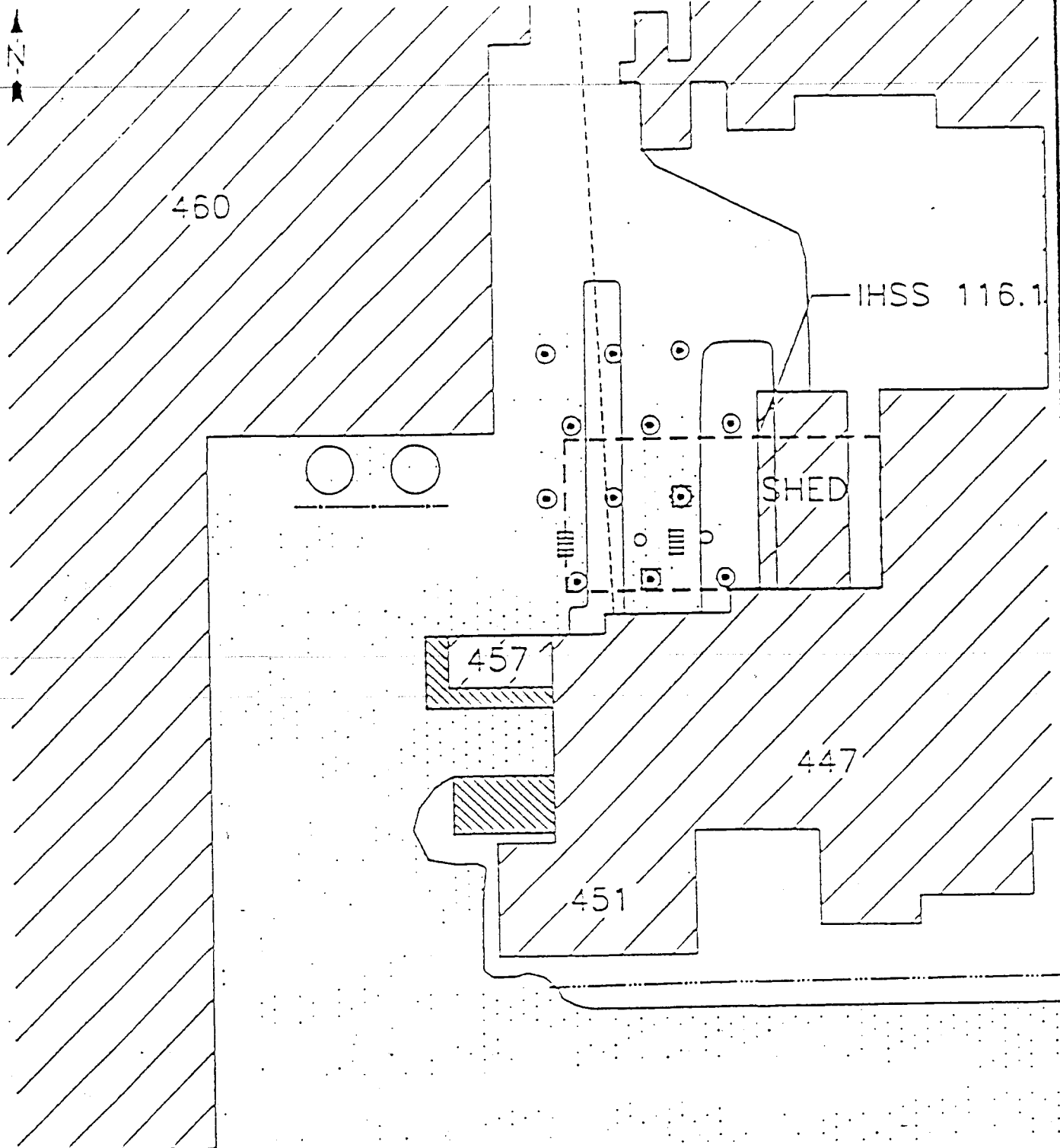
FILE NAME 401031/01-601.DWG

DATE 5/1/92

DRAWN BY JAA

APPROVED BY

CHECKED BY



EXPLANATION



BUILDING



PAVEMENT



CONCRETE



SOIL OR GRAVEL

--- IHSS BOUNDARY

----- OVERHEAD PIPING



DRAIN



DRAINAGE



SURFICIAL SOIL  
SAMPLING LOCATION



SOIL GAS SURVEY LOCATION



SOIL BORING LOCATION  
(TENTATIVE)



MONITORING WELL LOCATION  
(TENTATIVE)

25 0 25 50 FEET

NOTE: LOCATION OF PHYSICAL SITE  
FEATURES ARE APPROXIMATE

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GOLDEN, COLORADO

Figure 2  
FIELD SAMPLING PLAN FOR  
IHSS 116.1 - WEST  
LOADING DOCK BUILDING 447

REVISION NO. 0

FILE NAME 40103\01-602.DWG

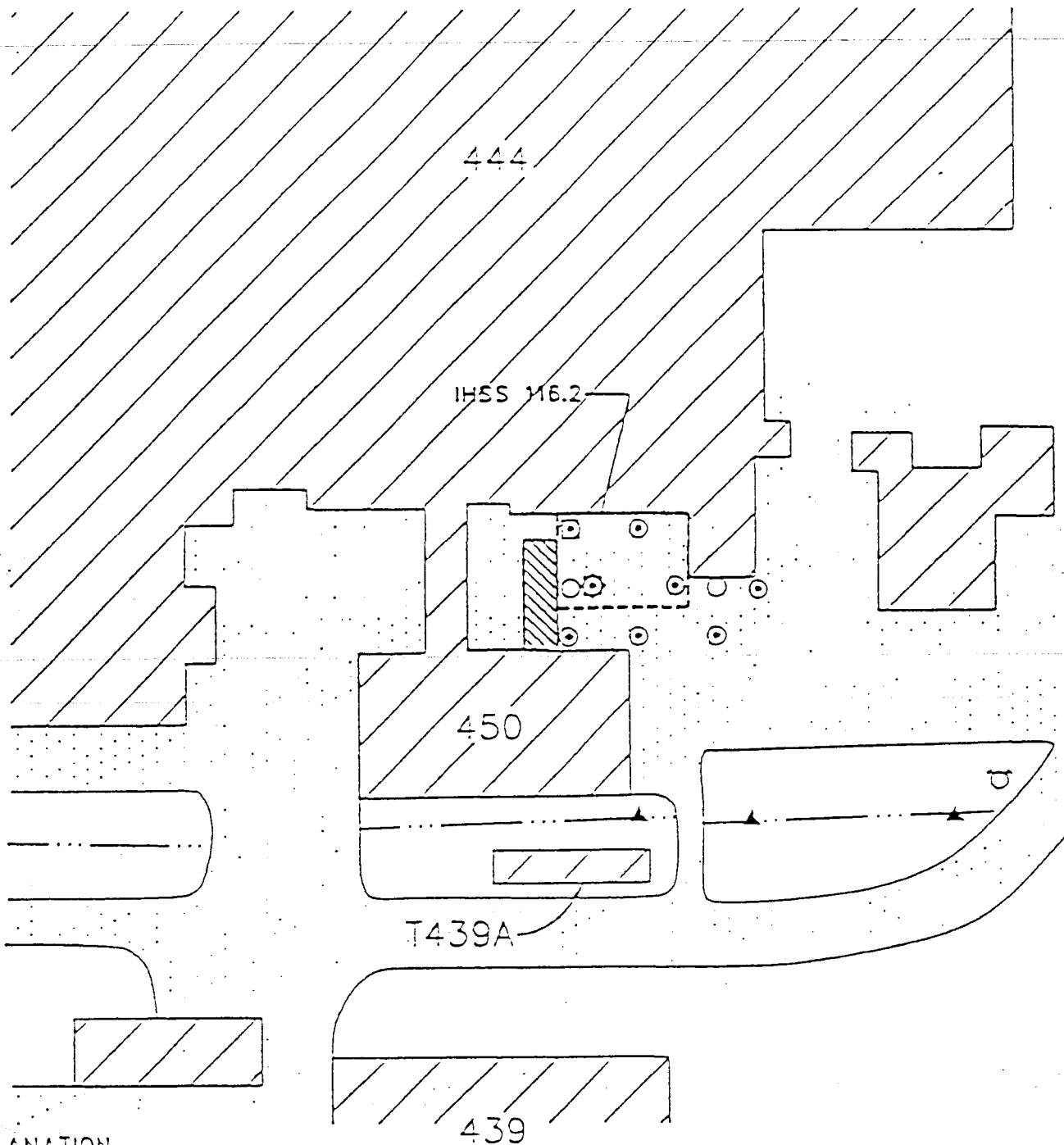
DATE 5/1/92

JAA

DRAWN BY

APPROVED BY

CHECKED BY



EXPLANATION



BUILDING

--- IHSS BOUNDARY

--- DRAINAGE



PAVEMENT



CONCRETE



SOIL OR GRAVEL



WATER HYDRANT

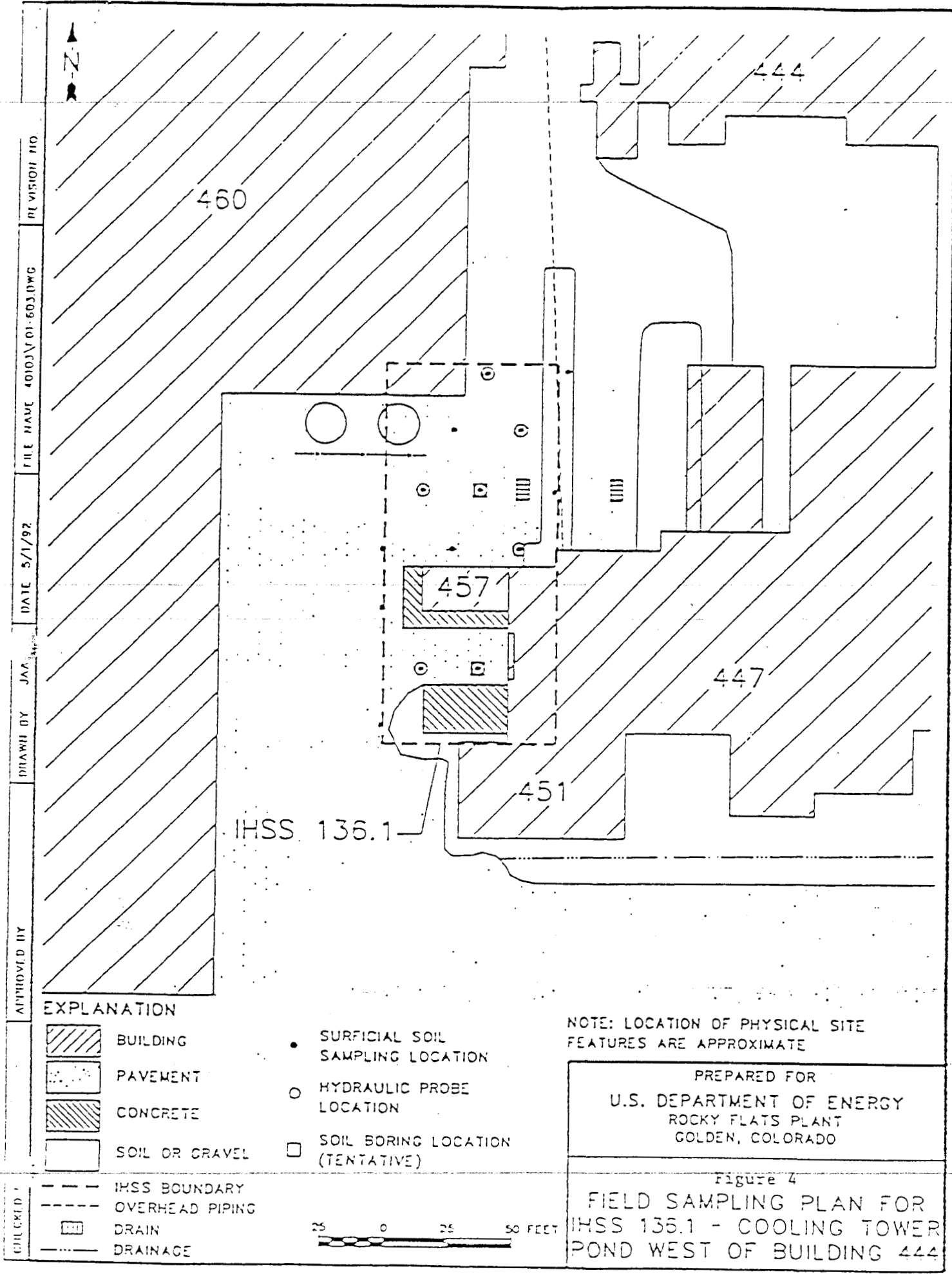
- SURFICIAL SOIL SAMPLING LOCATION
- SOIL GAS SURVEY LOCATION
- SOIL BORING LOCATION (TENTATIVE)
- ◇ MONITORING WELL LOCATION (TENTATIVE)
- ▲ SEDIMENT SAMPLE LOCATION

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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GOLDEN, COLORADO

Figure 3

FIELD SAMPLING PLAN FOR  
IHSS 116.2 - SOUTH  
LOADING DOCK BUILDING 444



REVISION NO.

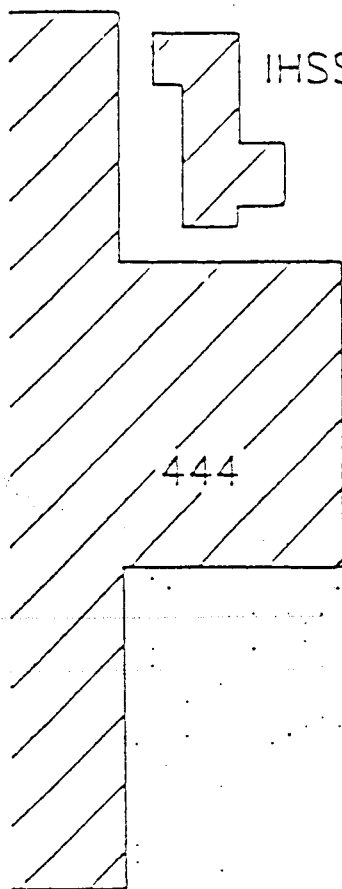
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DATE 5/1/92

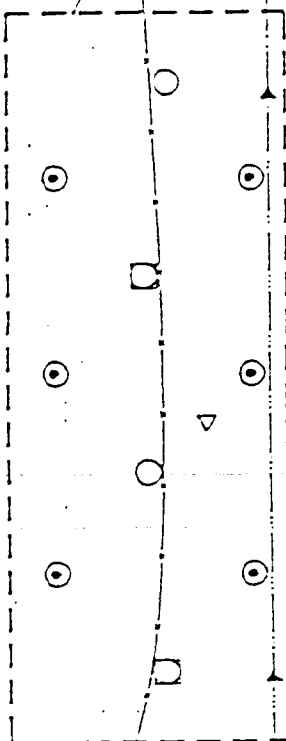
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APPROVED BY

CHECKED BY

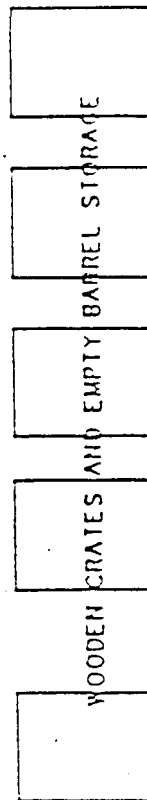


IHSS 136.2



SECURED AREA

NITRIC ACID TANKS



# EXPLANATION



BUILDING

--- IHSS BOUNDARY

--- DRAINAGE



PAVEMENT



SOIL OR GRAVEL

--- RAILROAD

--- FENCE

▽ NESTED TENSIOMETER LOCATION(TENTATIVE)

▲ SEDIMENT SAMPLE LOCATION

• SURFICIAL SOIL SAMPLING LOCATION

○ HYDRAULIC PROBE LOCATION

□ SOIL BORING LOCATION (TENTATIVE)

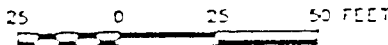
NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

PREPARED FOR

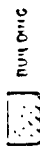
U.S. DEPARTMENT OF ENERGY  
ROCKY FLATS PLANT  
GOLDEN, COLORADO

Figure 5

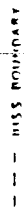
FIELD SAMPLING PLAN FOR  
IHSS 136.2-COOLING TOWER  
POND EAST OF BUILDING 444



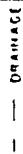
EXPLANATION



BUILDING



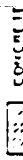
HISS BOUNDARY



DRAINAGE



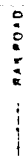
PAVEMENT



CONCRETE



SOIL OR GRAVEL



RAILROAD



FENCE

A SEDIMENT SAMPLE LOCATION

• SURFICIAL SOIL

• SAMPLING LOCATION

U SOIL GAS SURVEY LOCATION

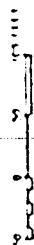
U SOIL BORING LOCATION

U (TENTATIVE)

U RADIOLOGICAL SURVEY

U LOCATION

NOTE: LOCATION OF PHYSICAL SITE  
FEATURES ARE APPROXIMATE

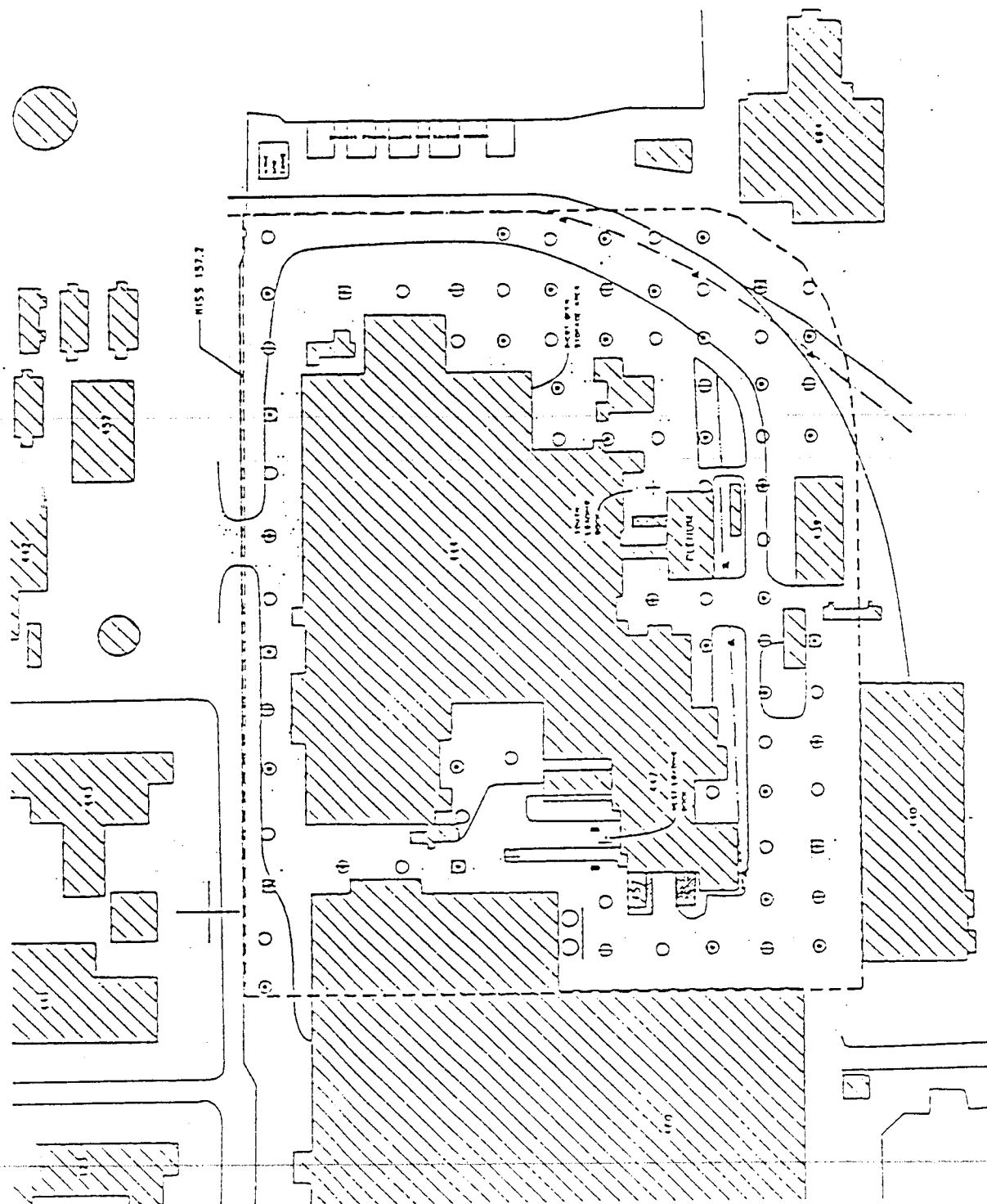


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CHEMICAL DIVISION

Figure 6

FIELD SAMPLING PLAN FOR  
HISS 157.2-RADIOACTIVE  
SITE SOUTH AREA





REVISION NO.

FILE NAME 40103\F02607.DWG

DATE 5/1/92

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CHECKED BY



EMPTY  
DRUM  
STORAGE  
AREA

IHSS 120.1

SHED

664

# EXPLANATION



BUILDING



IHSS BOUNDARY



PAVEMENT



SOIL OR GRAVEL



RAILROAD



FENCE



NESTED TENSIO-METER  
LOCATION(TENTATIVE)



SURFICIAL SOIL/DEPTH  
PROFILE SAMPLING LOCATION



SOIL GAS SURVEY LOCATION



SOIL BORING LOCATION  
(TENTATIVE)



RADIOLOGICAL SURVEY  
LOCATION

25 0 25 50 FEET

NOTE: LOCATION OF PHYSICAL SITE  
FEATURES ARE APPROXIMATE

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GOLDEN, COLORADO

Figure 8  
FIELD SAMPLING PLAN FOR  
IHSS 120.1-FIBERGLASSING  
AREA NORTH OF BUILDING 664

REVISION NO.

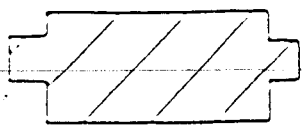
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DATE 5/1/92

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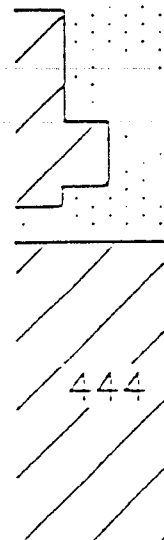
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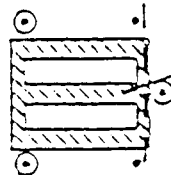


COTTONWOOD STREET

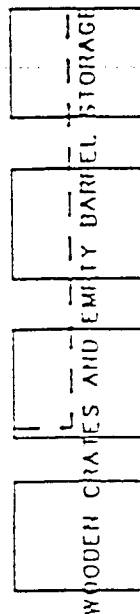
IHSS 189



SECURED AREA



NITRIC ACID TANKS



WOODEN CRATES AND EMPTY DARIEL STORAGE

EXPLANATION



BUILDING

--- IHSS BOUNDARY

--- DRAINAGE



PAVEMENT



SOIL OR GRAVEL

--- RAILROAD

--- FENCE



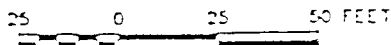
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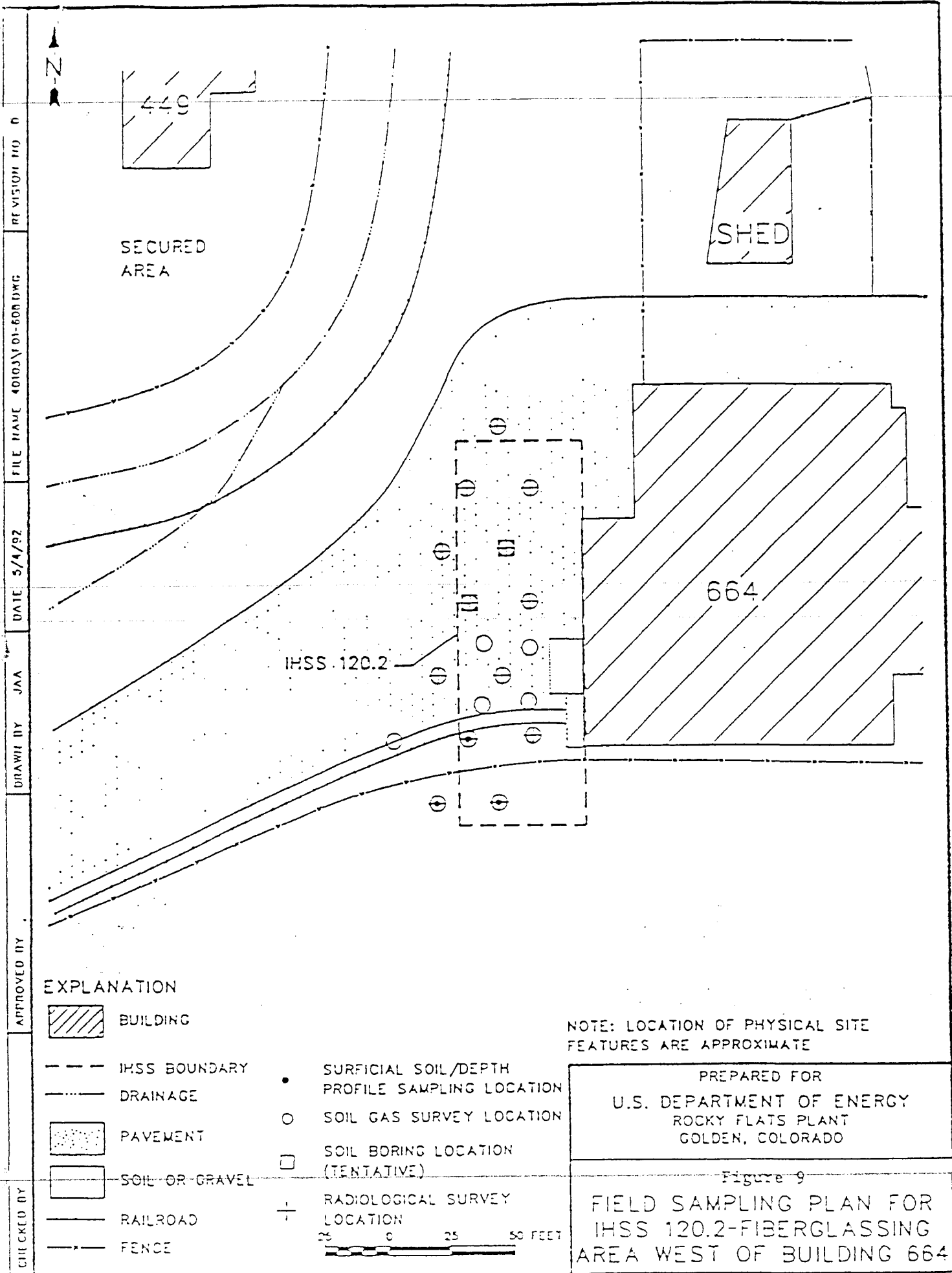
- SURFICIAL SOIL SAMPLING LOCATION
- HYDRAULIC PROBE LOCATION

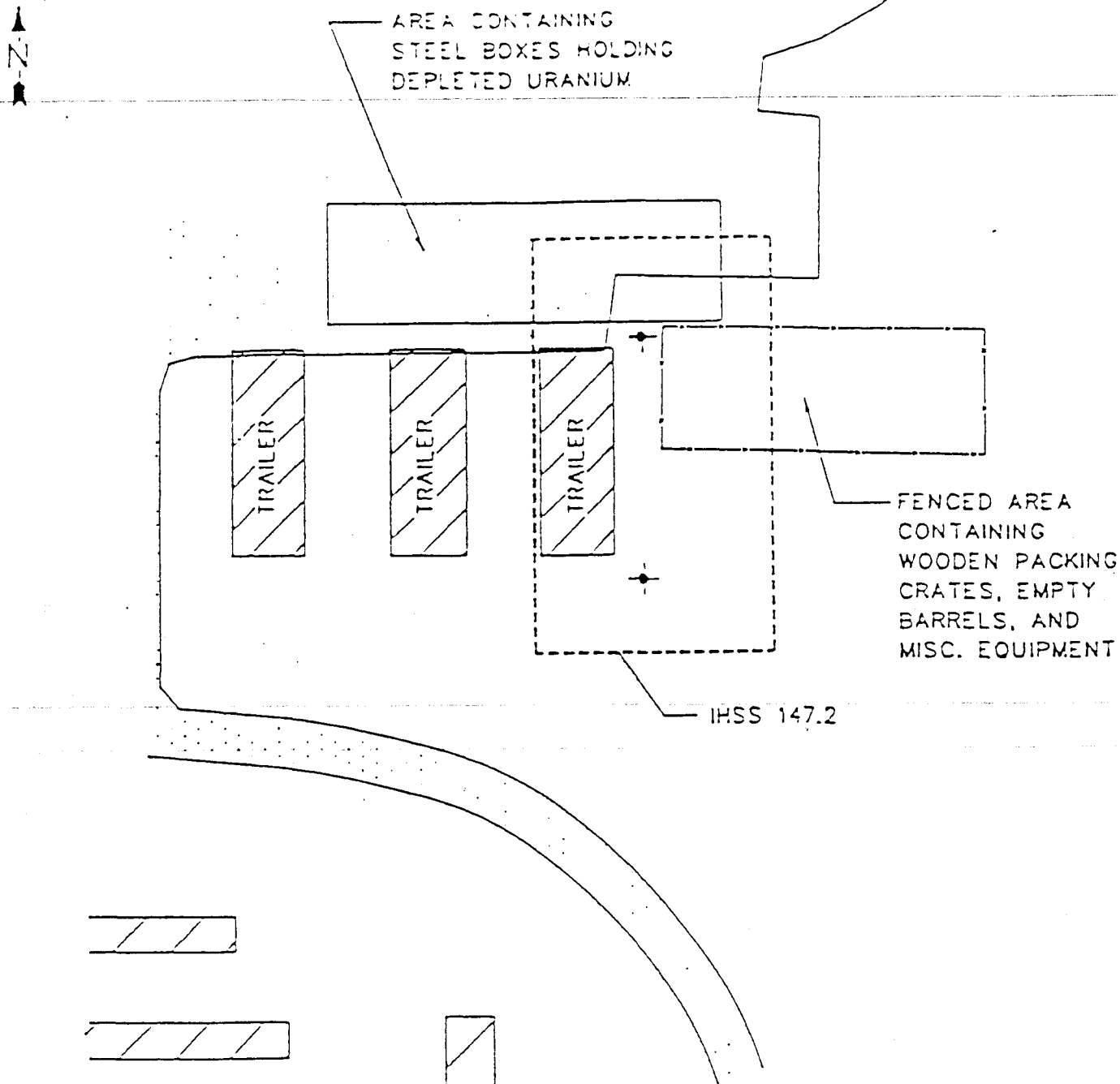
NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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






Figure 10  
FIELD SAMPLING PLAN FOR  
IHSS 189-NITRIC  
ACID TANKS







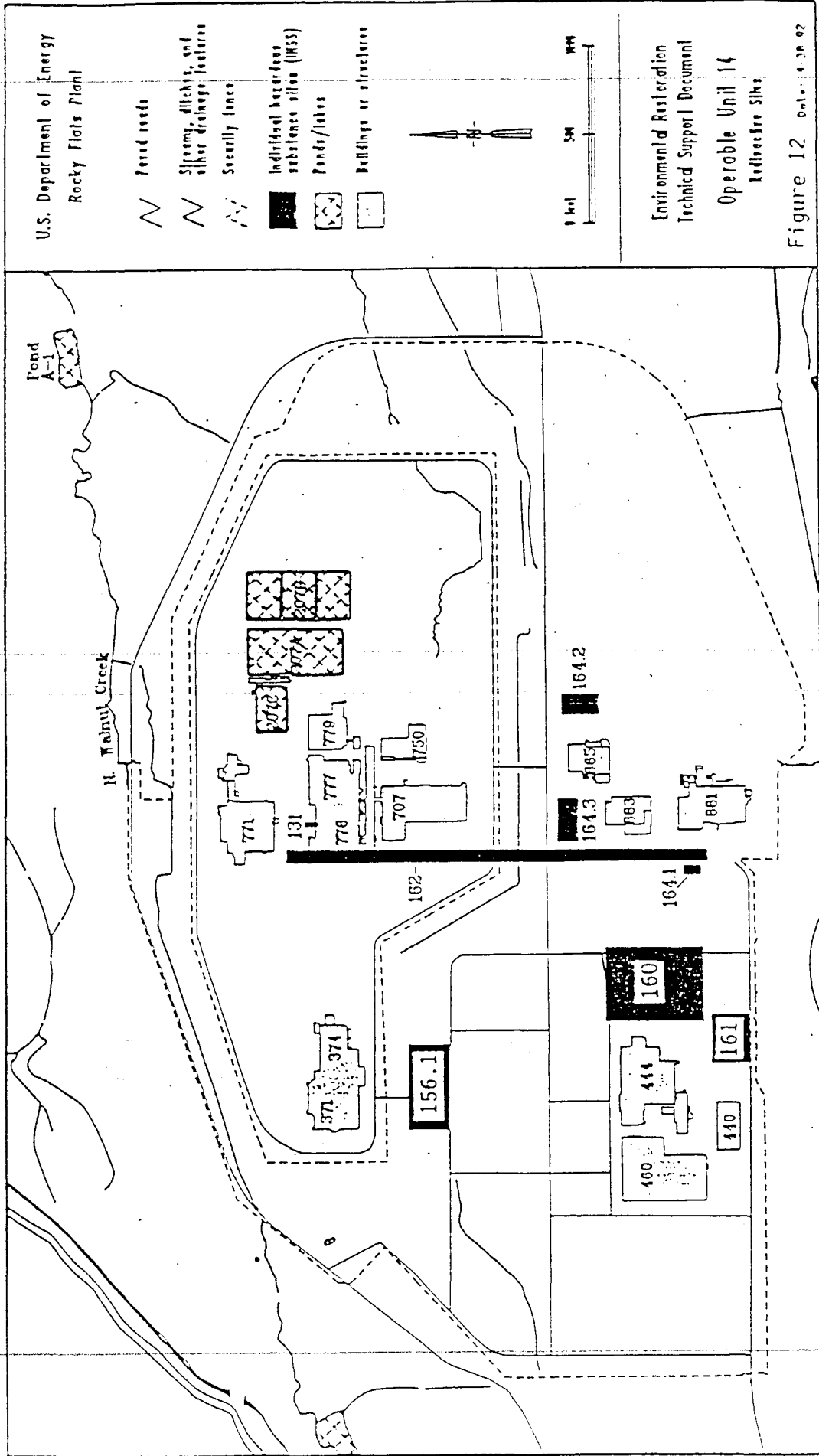
EXPLANATION

-  BUILDING
-  IHSS BOUNDARY
-  PAVEMENT
-  SOIL OR GRAVEL
-  FENCE
-  SURFICIAL SOIL/DEPTH PROFILE SAMPLING LOCATION
-  RADIOLOGICAL SURVEY

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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Figure 11  
FIELD SAMPLING PLAN FOR  
IHSS 147.2-BUILDING 881  
CONVERSION ACTIVITY



**Survey Sample Location**

- 2" surface scrapes at 25 ft. centers
- 2" soil borings at 25 ft. centers

Ground water wells



Unimproved dirt roads

Individual hazardous substance sites (HSS)

Buildings or structures

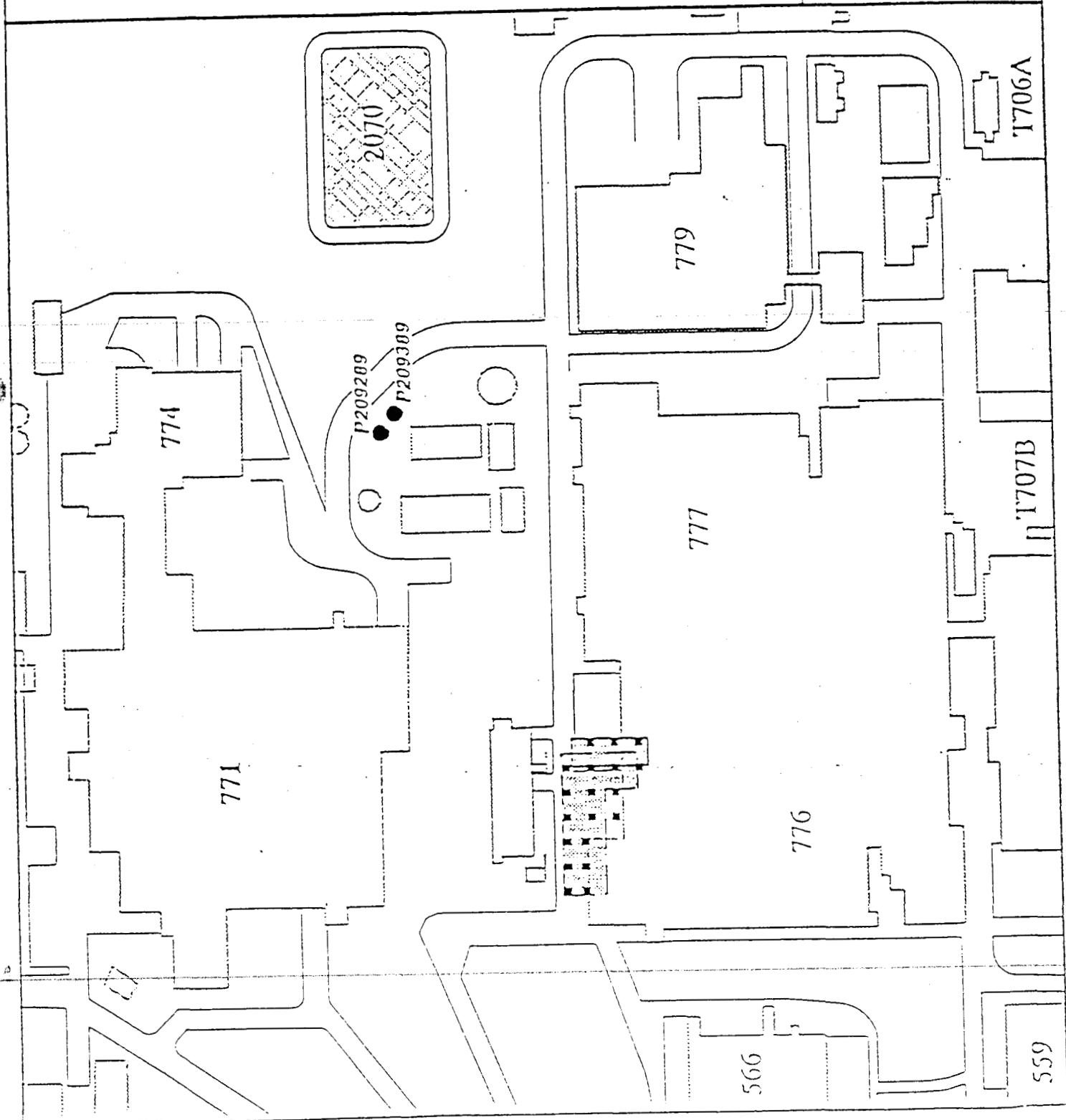
Ponds/lakes

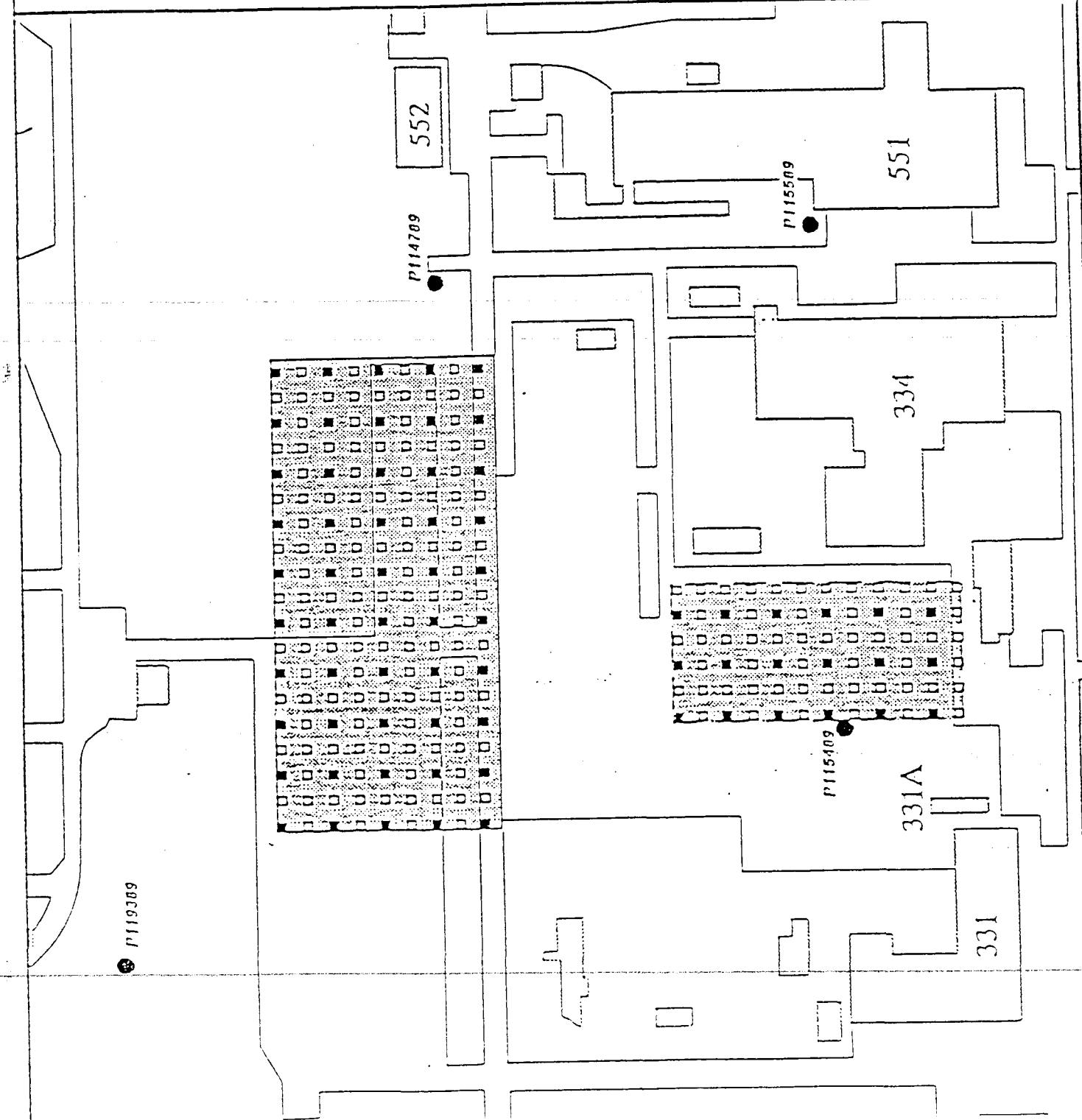


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ROCKY FLATS PLANT  
GOLDEN, COLORADO

Figure 13

**SOIL BORING LOCATIONS  
HSS 131**





□ Survey Sample Location  
 - 2" surface scrapes at 50 ft. centers

■ Survey Sample Location  
 - FIDLER at 25 ft. centers  
 - 2" surface scrapes at 50 ft. centers

● Ground water wells

Paved roads

Individual hazardous substance sites (HSS)

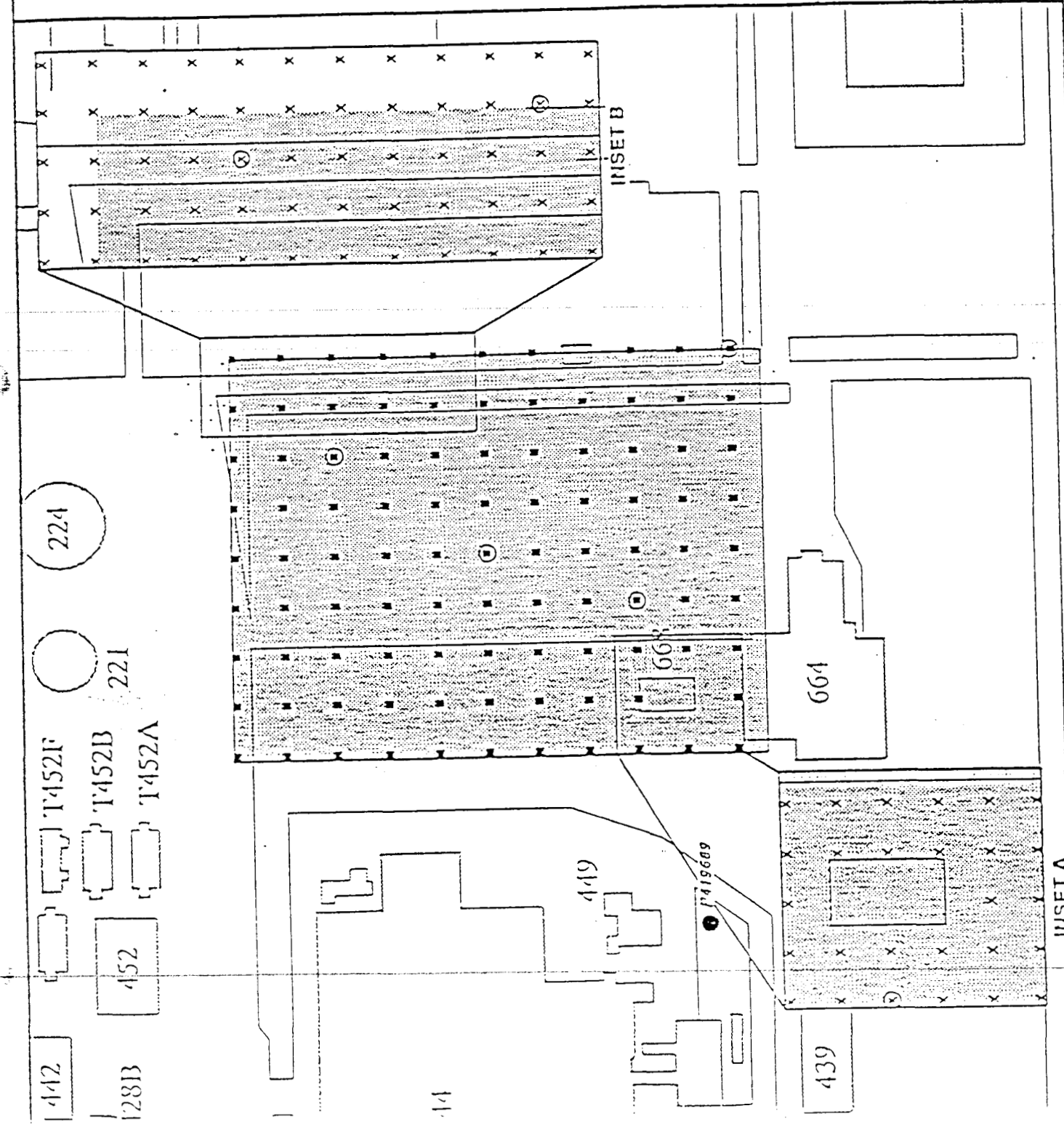
Buildings or structures



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 GOLDEN, COLORADO

Figure 1/4

SOIL BORING LOCATIONS  
 HSS 156.1



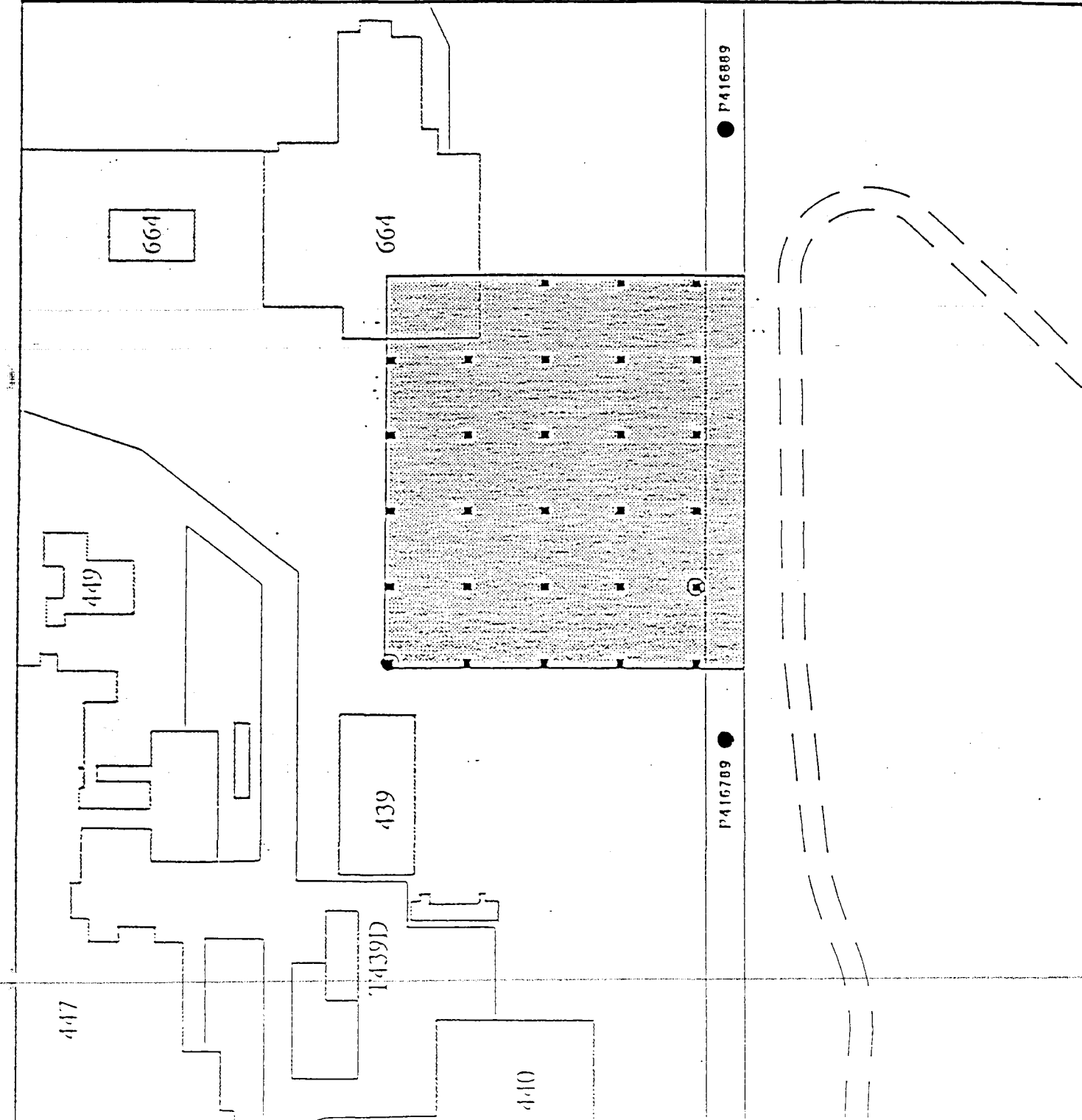
- Survey Sample Location  
 ○ Soil Gas Samples at 50 ft. centers  
 ■ Borehole randomly selected to samples 1 out of every 25 soil gas sample locations  
 ■ 2' surface scrapes at 50 ft. centers  
 x Concentrated Radiological Survey Sample Area at 25 centers based on Historical Information

- Ground water wells  
 ≡ Paved roads  
 ≡ Unimproved dirt roads  
 [ ] Individual hazardous substance sites (HSS)  
 [ ] Buildings or structures



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 ROCKY FLATS PLANT  
 GOLDEN, COLORADO

Figure 15  
 SOIL GAS AND  
 RADIOLOGICAL SURVEY  
 LOCATIONS IISS 160



**Survey Sample Location**

- Soil Gas Samples at 50 ft. centers
- Borehole randomly selected to samples 1 out of every 25 soil gas sample locations
- 2" surface scrapes at 50 ft. centers

Ground water wells

Paved roads

Unimproved dirt roads

Individual hazardous substance sites (HSS)

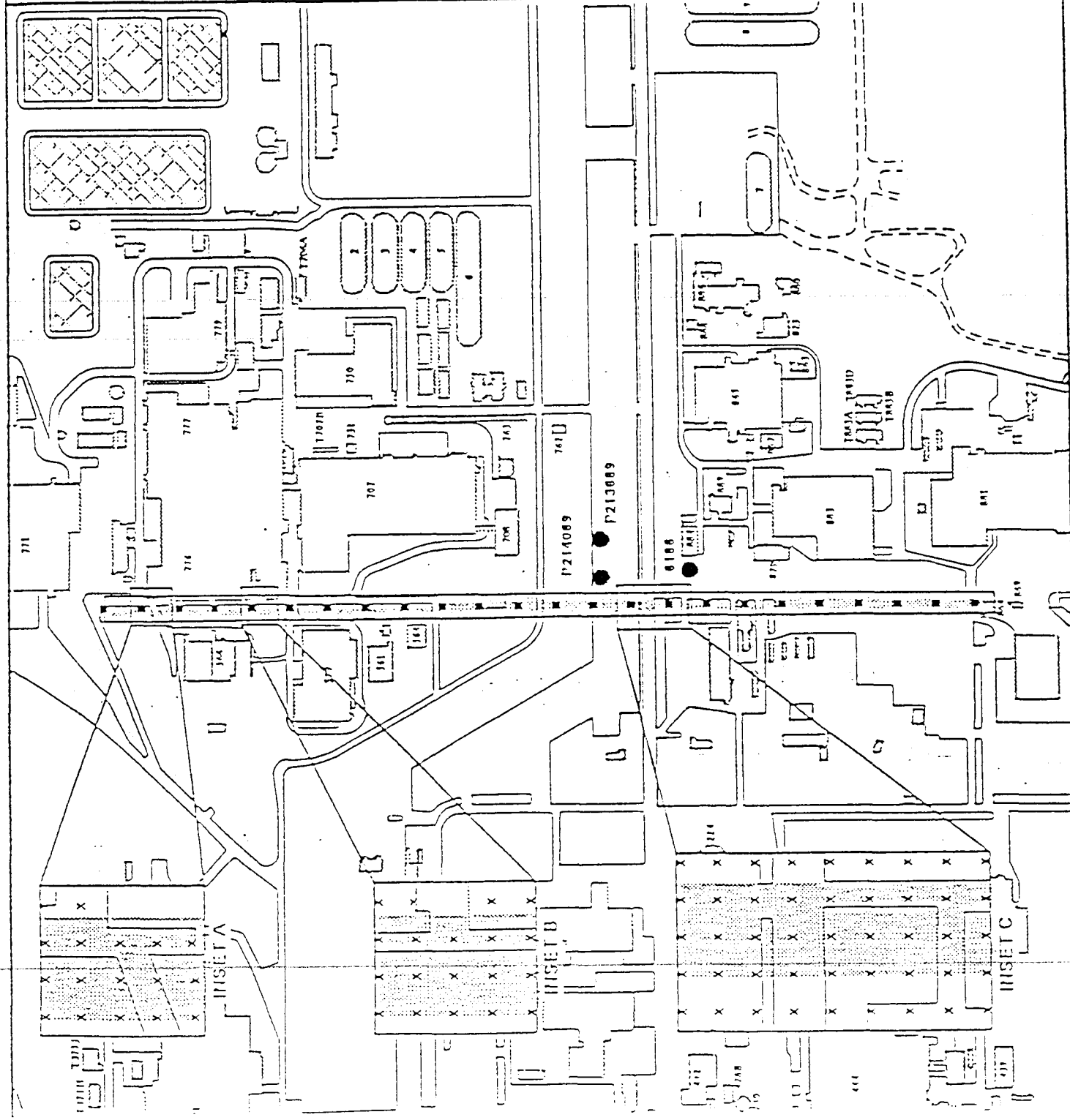
Buildings or structures



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GOLDEN, COLORADO

Figure 16

**SOIL GAS AND  
RADIOLOGICAL SURVEY  
LOCATIONS HHS 161**



Survey Sample Location:  
 - 2' surface scrapes at  
 100 ft. centers  
 - 2' soil borings at  
 100 ft. centers

Concentrated Survey  
 Sample Area at 25'  
 centers based on  
 Historical Information

Ground water wells

Paved roads

Unimproved dirt roads

Individual hazardous  
 substance sites (HSS)

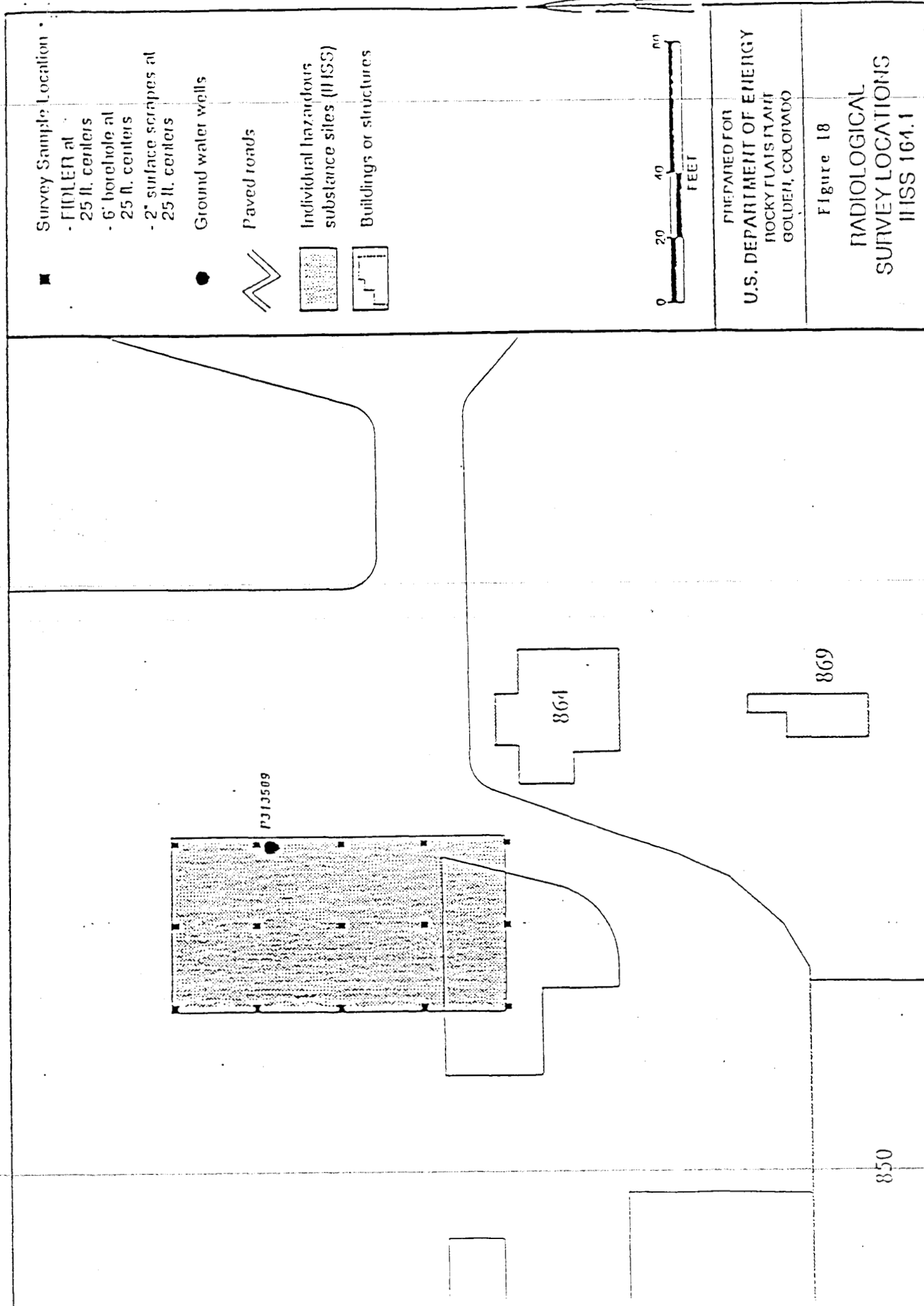
Buildings or structures

Ponds/lakes



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Figure 17  
 RADIOLOGICAL SURVEY  
 LOCATIONS HSS 162



Survey Sample Location

- FIDLER at 25 ft. centers
- 6' borehole at 25 ft. centers
- 2" surface scrapes at 25 ft. centers

Ground water wells

Paved roads

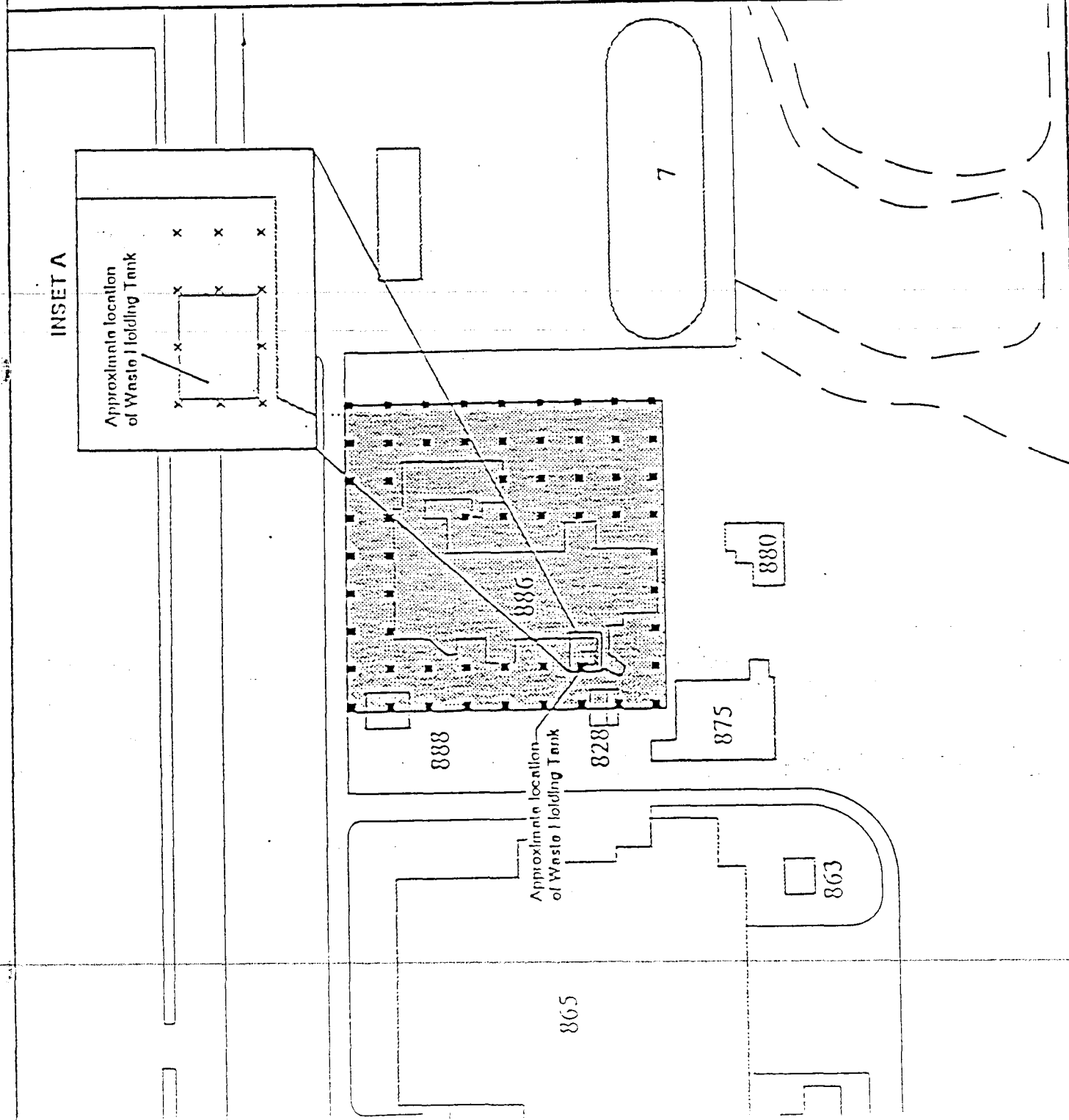
Individual hazardous substance sites (HSS)

Buildings or structures

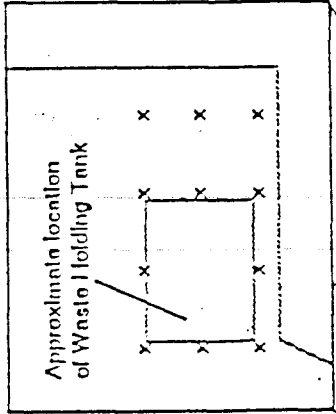


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Figure 18  
RADIOLOGICAL  
SURVEY LOCATIONS  
HISS 164.1



**INSET A**



- Survey Sample Location
  - 2" surface scrapes at 25 ft. centers
  - 6" borehole at 25' center
  - FIDLER survey at 25' centers

x Concentrated Survey Sample Area at 5' centers. Boreholes drilled to weathered bedrock

● Ground water wells

══ Paved roads

══ Unimproved dirt roads

▨ Individual hazardous substance sites (HSS)

▧ Buildings or structures



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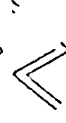
Figure 19  
**RADIOLOGICAL  
SURVEY LOCATIONS**  
HSS 164.2

- Survey Sample Location
- 2" surface scrapes at 25 ft. centers
  - 6" borehole at 25' centers
  - FIDLEN survey at 25' centers

● Ground water wells



Paved roads



Unimproved dirt roads



Individual hazardous substance sites (IHSS)



Buildings or structures



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GOLDEN, COLORADO

Figure 20  
RADIOLOGICAL  
SURVEY LOCATIONS  
IHSS 164.3

